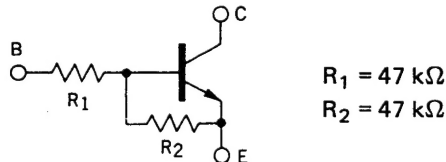


NEC

NPN SILICON TRANSISTOR BA1L4M

DESCRIPTION The BA1L4M is designed for use in medium speed switching circuit.

FEATURE • Bias resistors built-in type NPN transistor equivalent circuit.



ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures

Storage Temperature -55 to $+150\text{ }^\circ\text{C}$

Junction Temperature $150\text{ }^\circ\text{C}$ Maximum

Maximum Power Dissipation ($T_a = 25\text{ }^\circ\text{C}$)

Total Power Dissipation 250 mW

Maximum Voltages and Currents ($T_a = 25\text{ }^\circ\text{C}$)

V_{CBO} Collector to Base Voltage 60 V

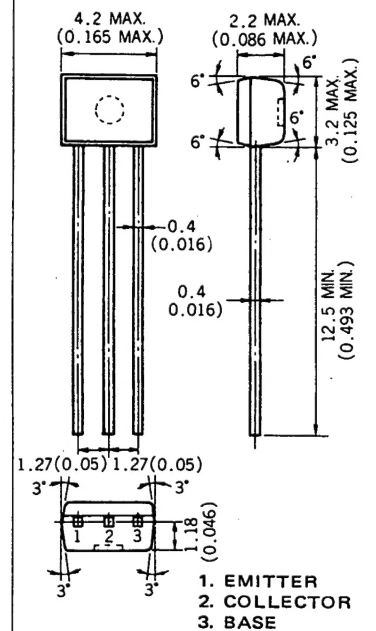
V_{CEO} Collector to Emitter Voltage 50 V

V_{EBO} Emitter to Base Voltage 10 V

$I_{C(DC)}$ Collector Current (DC) 100 mA

$I_{C(pulse)}$ Collector Current (pulse) 200 mA

PACKAGE DIMENSIONS in millimeters (inches)



ELECTRICAL CHARACTERISTICS ($T_a = 25\text{ }^\circ\text{C}$)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
R_1	Input Resistance	32.9	47.0	61.1	$\text{k}\Omega$	
R_1/R_2	Resistors Ratio	0.9	1.0	1.1	—	
V_{IL}	Low Level Input Voltage		1.1	0.8	V	$V_{CE} = 5.0\text{ V}$, $I_C = 100\text{ }\mu\text{A}$
V_{IH}	Hi Level Input Voltage	5.0	1.7		V	$V_{CE} = 0.2\text{ V}$, $I_C = 5.0\text{ mA}$
t_{on}	Turn on Time		0.27	0.7	μs	$V_{CC} = 5.0\text{ V}$, $R_L = 1.0\text{ k}\Omega$ $V_{in} = 5.0\text{ V}$, $PW = 2\text{ }\mu\text{s}$, Duty Cycle $\leq 2\%$
t_{stg}	Storage Time		2.0	5.0	μs	
t_{off}	Turn off Time		2.48	6.0	μs	
h_{FE1}	DC Current Gain	85	240	340	—	$V_{CE} = 5.0\text{ V}$, $I_C = 5.0\text{ mA}$
h_{FE2}	DC Current Gain	95	640		—	$V_{CE} = 5.0\text{ V}$, $I_C = 50\text{ mA}$
$V_{CE(sat)}$	Collector Saturation Voltage		0.04	0.2	V	$I_C = 5.0\text{ mA}$, $I_B = 0.25\text{ mA}$
I_{CBO}	Collector Cutoff Current			0.1	μA	$V_{CB} = 50\text{ V}$, $I_E = 0$

TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)